

REMARKS

This Amendment is fully responsive to the non-final Office Action dated March 14, 2008, issued in connection with the above-identified application. Claims 1-19 were previously pending in the present application. With this Amendment, claims 1-11 have been amended, and claims 12-19 have been canceled without prejudice or disclaimer to the subject matter therein. Accordingly, claims 1-11 are all the claims that remain pending in the present application. No new matter has been introduced by this Amendment. Favorable reconsideration is respectfully requested.

The Applicants thank the Examiner for granting the telephone interview conducted with the Applicants representatives on May 21, 2008. During the interview, distinguishable features between claim 1 (e.g., as an exemplary independent claim) and the cited prior art were discussed in detail. Specifically, it was noted during the interview that the Examiner appears to neglect the limitation of "introducing outside air into the reduced pressure environment while maintaining the pressure state and the curing temperature", as recited in independent claim 1. During the interview, the Examiner suggested amending the claims to recite more orderly steps in order to clarify the distinguishable features between the present invention and the cited references. Additionally, the Examiner indicated that an updated search would need to be performed prior to indicating the allowability of the claims.

In the Office Action, the Examiner has objected to the specification and abstract.

First, the Examiner indicated that the specification should be amended to include a cross-reference to related international application no. PCT/JP02/12842 filed on December 9, 2002. Although the Applicants do not believe that such a cross-reference is necessary because the Applicants are not making a claim for domestic priority, the Applicants have herein amended the specification. Specifically, page 1 of the specification has been amended to include a cross-reference to related international application no. PCT/JP02/12842, as suggested by the Examiner. Withdrawal of the objection to the specification is respectfully requested.

Second, the Examiner has objected to the abstract for being in excess of 150 words. Specifically, the Examiner indicated that the current abstract is 192 words. Accordingly, the

Applicants have provided herein a replacement abstract which is between 50 and 150 words. Withdrawal of the objection to the abstract is respectfully requested.

In the Office Action, claims 1-4, 7, 8 and 10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Yasue et al. (U.S. Patent No. 6,010,768, hereafter “Yasue”) in view of the Applicants’ Admitted Prior Art (hereafter “the AAPA”). The Applicants respectfully traverse the above rejections for the reasons noted below.

The Applicants maintain that the cited prior art fails to disclose or suggest all the features recited in at least independent claim 1. Specifically, claim 1, in relevant part, recites the following features that are not disclosed or suggested by the cited prior art:

“[a] method for manufacturing a printed wiring board..., wherein the step of heating and curing the resin layer comprises:”...

“introducing outside air into the reduced pressure environment while maintaining the pressed state and the curing temperature”; and

“reducing the pressure applied to the smoothing plate while maintaining the curing temperature.”

The features noted above in claim 1 are fully supported by the Applicants’ disclosure (see e.g., ¶11, ¶12, and ¶22).

The present invention, as recited in claim 1, is directed to a method for manufacturing a printed wiring board that includes the introduction of outside air into a reduced pressure chamber while maintaining the pressed state and the curing temperature. Specifically, the inflow of outside air lowers the temperature of the exposed surfaces of the resin layer and increases the hardness of the surfaces. As a result, the resin is prevented from excessively flowing out of the spaces between the circuit patterns. When the resin layer as a whole is almost cured, the pressure applied to the stainless steel plates is reduced. This makes it possible to prevent the resin layer from being excessively compressed and the resin from further flowing out.

In the Office Action, the Examiner relied on Yasue in view of the AAPA for disclosing or suggesting all the features noted above in independent claim 1. Specifically, the Examiner alleged that Yasue disclosed the claimed heating and curing of the resin layer (col. 23, lines 52-

53); and that the AAPA disclosed the use of a reduced pressure environment, reducing pressure and cooling of the resin layer (e.g., see ¶ 0005).

However, the Applicants respectfully point out that the Examiner appears to have neglected the limitation of introducing outside air into the reduced pressure environment while maintaining the pressed state and the curing temperature, as recited in claim 1. Additionally, although the AAPA discusses the reduction of pressure applied to the smoothing plate, the AAPA does not disclose or suggest reducing the pressure applied to the smoothing plate while maintaining the curing temperature, as recited in claim 1.

Specifically, independent claim 1 recites that the heating and curing of the resin layer includes “introducing outside air into the reduced pressure environment while maintaining the pressed state and the curing temperature.” As noted above, the inflow of outside air lowers the temperature of the exposed surfaces of the resin layer and increases the hardness of the surfaces. As a result, the resin is preventing from excessively flowing out of the spaces between the circuit patterns.

In the Office Action, the Examiner did not address whether or not the cited prior art disclosed or suggested this feature. Regardless, after a detailed review of the cited prior art, neither reference appears to disclose or suggest this feature.

Yasue fails to disclose or suggest the use of a reduced pressure environment. (see e.g., Office Action, pg. 4). Therefore, it logically follows that the reference also fails to disclose or suggest addressing problems associated with using a reduced pressure environment. Specifically, one problem associated with the reduced pressure environment is that resin with a lower viscosity can flow out of the spaces between the circuit patterns when the resin layer is pressed. The present invention, as recited in claim 1, provides the advantage of introducing outside air into the reduced pressure environment while the pressing state and the curing temperature are maintain.

Therefore, Yasue not only fails to disclose or suggest the above feature, but also fails to appreciate the problem solved by the present invention. Therefore claim 1 is clearly distinguished over Yasue.

Additionally, the AAPA merely describes an advantage and a disadvantage associated with using a reduced pressure environment. Specifically, the AAPA discloses that an advantage of using the reduced pressure environment is that the resin layer can be cured without the introduction of air bubbles. Additionally, the AAPA also describes a problem associated with using the reduced pressure environment, which is that the resin can flow out of the spaces between the circuit patterns when the resin layer is pressed. However, nothing in the AAPA discusses how to address this problem.

Moreover, independent claim 1 recites that the heating and curing of the resin layer includes “reducing the pressure applied to the smoothing plate while maintaining the curing temperature.” In the Office Action, the Examiner indicated that it would be obvious to one of ordinary skill in the art to “release pressure and cool a resin layer” during manufacturing of a multilayer printed wiring board. However, after a detailed review of Yasue and the AAPA, the cited prior art does not appear to disclose or suggest reducing pressure while maintaining a curing temperature.

Based on the above discussion, the Applicants maintain that Yasue and the AAPA fail to disclose or suggest at least the following features recited in claim 1:

- 1) introducing outside air into the reduced pressure environment while maintaining the pressed state and the curing temperature; and
- 2) reducing the pressure applied to the smoothing plate while maintaining the curing temperature.

Accordingly, no combination of Yasue and the AAPA would result in, or otherwise render obvious, independent claim 1. Additionally, no combination of Yasue and AAPA would result in, or otherwise render obvious, claims 2-4, 7, 8 and 10 by virtue of their dependency from independent claim 1.

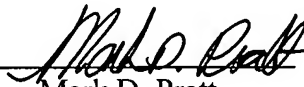
In the Office Action, claims 5, 6, 9 and 11 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Yasue in view of the AAPA, and further in view of Fukutomi et al. (U.S. Patent No. 6,26,648, hereafter “Fukutomi”).

Claims 5, 6, 9 and 11 depend from independent claim 1. As noted above, Yasue and the AAPA fail to disclose or suggest all the features recited in claim 1. Additionally, Fukutomi fails to overcome the deficiencies noted above in Yasue and the AAPA. Therefore, no combination of Yasue, the AAPA, and Fukutomi would result in, or otherwise render obvious, claims 5, 6, 9 and 11 by virtue of their dependency from independent claim 1.

In light of the above, the Applicants respectfully submit that all the pending claims are patentable over the prior art of record. The Applicants respectfully request that the Examiner withdraw the objections and rejections presented in the Office Action dated March 14, 2008, and pass this application to issue. The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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